

3 and 10 are rejected under 35 U.S.C. § 112, second paragraph, and claims 1-19, 21-26, 28, and 44 are rejected as obvious under 35 U.S.C. § 103.

By Amendment and Response to the Examiner's objection and all rejections under 35 U.S.C. § 112 and 35 U.S.C. § 103; it is respectfully submitted that the rejected claims are not indefinite, not anticipated by prior art, and are not obvious in light of prior art.

I. Claim Amendments Summary

Claims 1, 8, 15, 22, and 44 are amended herein as suggested in the examiner interview from September 6, 2002.

Claim 13 is amended herein in line 2 to give the words "at least four arms" proper antecedent basis. Claim 19 is amended herein in line 2 to give the words "at least three arms" proper antecedent basis. Claim 26 is also amended in line 2 to give the words "at least four arms" proper antecedent basis.

II. Response to Examiner's Objection to Claim 3

Claim 3 is objected to because the term "lease" appears in line 2 of the claim. Claim 3 is amended herein to replace the term "lease" with the word "least" in line 2 of the claim. It is believed that the amendment to claim 3 overcomes the objection, and such indication is respectfully requested.

III. Response to 35 U.S.C. § 112 Rejections

Claims 3 and 10 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Particularly, it is asserted that the claim language remains confusing because the bowling ball is used to determine the length of the arms and that the bowling ball has not been positively claimed. Claims 3 and 10 have been amended to state that at least one of said plurality of arms "defines an arc of at least 90 degrees." As amended, it is believed that claims 3 and 10

are no longer indefinite under 35 U.S.C. § 112, second paragraph, and are therefore allowable, and such indication is respectfully requested.

IV. Response to 35 U.S.C. § 103 Rejections

A. Response to 35 U.S.C. § 103 Rejections from Paragraphs 7 and 8 of the Final Office Action

Claims 1, 2, 3, 4, 6, 7, and 44 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Pat. No. 5,732,474 ('474) to Cannon in view of U.S. Pat. No. 3,161,041 ('041) to Amburgey. In support of the rejection, it is asserted in the final office action that Cannon discloses a device wherein "said base portion has a partially spherical shape (figure 1)," and that "Ambergey shows a device including a semi-spherical base portion (figure 5)." It is also stated that Cannon discloses a device comprising, among other things, "at least four arms (figure 2) for extending along a curved surface."

It is respectfully submitted that neither the '474 patent nor the '041 patent, alone or in combination, teach or suggest a semi-spherical base portion as required by claims 1 and 44. To establish a prima facie case of obviousness, the prior art references when combined must teach or suggest all the claim limitations. See MPEP § 706.02(j).

The '474 patent discloses a manipulative, referred to therein as a "LABES," for assisting students in the visual understanding of the relationships of angles in various geometric shapes. The LABES includes a flat disk and is not semi-spherical. Particularly, the '474 patent teaches "a 360 degree compass inscribed on the face of a generally flat, circular disk 14." See '196 patent, Col. 2, ll. 51-52. Figs. 4, 5, and 6 of the '474 patent also depict the "circular disk 14" as being flat. As such, the '474 patent does not show or suggest a semi-spherical base portion as required by claims 1 and 44.

The '041 patent discloses a ball marking device, but also fails to disclose or teach a semi-spherical base portion. The final office action refers to Fig. 5 of the '041 patent for the assertion that the '041 patent shows a device including a semi-spherical base portion. However, the figures shown and described in the '041 patent do not teach or suggest a semi-spherical base. The '041 patent teaches in "Figures 1, 2, and 3, the ball marking device therein is in the form of a framework generally designated F which, in the present instance, is formed of several rigidly interconnected pieces." See '041 patent, Col. 2, ll. 28-31. The '041 patent describes Fig. 4 as "a perspective view of the invention showing how it is applied to a bowling ball for marking purposes." See '041 patent, Col. 2, ll. 16-18. However, Figs. 1-4 of the '041 patent show the ball marking device in the form of a framework and do not show a semi-spherical base. Further, Fig. 5 shows the ball marking device in the form of a framework resting on a ring shaped ball holder described therein as annular shaped and not semi-spherical shaped. In particular, the '041 patent states in regard to Fig. 5 that "the ball B is shown operatively supported in a conventional ball holder 28 of a dodo scale, the holder as usual being generally of annular shape having an upwardly presented flat face or surface 29 lying in a horizontal plane passing through the center of the ball B supported in such holder." See '041 patent, Col. 3, ll. 73 to Col. 4, ll. 3. Therefore, the '474 patent does not show or suggest a semi-spherical base portion as required by claims 1 and 44.

For at least these reasons, it is believed that claims 1 and 44 are patentable over the '474 patent and the '041 patent, alone or in combination, under 35 U.S.C. § 103(a) and are therefore allowable, and such indication is respectfully requested. Claims 2, 3, 4, 6, and 7 depend from and include all of the limitations of claim 1. Accordingly, combining the '474 and '041 patents does not teach or suggest all the claim limitations of claims 2, 3, 4, 6, and 7 of the subject application for at least the same reasons as claim 1.

B. Response to 35 U.S.C. § 103 Rejections from Paragraph 9 of the Final Office Action

Claim 5 is rejected under 35 U.S.C. § 103 as being unpatentable over the '474 patent in view of the '041 patent and further in view of U.S. Patent No. 3,096,586 ('586) to Albright. In support of the rejection, it is stated that "Albright shows a device including the alignment of the indicator arms with the center of the base portion (figures 1-3)." However, the '586 patent does not teach or suggest a semi-spherical base portion as required by claim 1. As discussed above, the '474 and '041 patents also do not teach or suggest a semi-spherical base portion as required by claim 1. Therefore, combining the '586 patent with the '474 and '041 patents does not teach or suggest a semi-spherical base portion. Claim 5 depends from and includes all of the limitations of claim 1. Accordingly, combining the '474, '041, and '586 patents does not teach or suggest all the claim limitations of claim 5 of the subject application for at least the same reasons as claim 1. For at least this reason, it is believed that claim 5 is patentable over the '474 patent, the '041 patent, and the '586 patent, alone or in combination, under 35 U.S.C. § 103(a) and is therefore allowable, and such indication is respectfully requested.

C. Response to 35 U.S.C. § 103 Rejections from Paragraph 10 of the Final Office Action

Claims 8-19, 21-26, and 28 are also rejected under 35 U.S.C. § 103 as being unpatentable over the '474 patent in view of the '041 patent and further in view the '586 patent. In support of these rejections, it is stated that "Cannon, Amburgey, and Albright further disclose a collar that attaches to the indicator arms and a substantially open middle portion."

As previously stated herein, neither the '474 patent, the '041 patent, nor the '586 patent alone or in combination, teach or suggest a semi-spherical base portion as required by claim 1. A semi-spherical base portion is also required by claims 8, 15, and 22. Therefore, combining the '586 patent with the '474 and '041 patents also does not teach or suggest a semi-spherical base portion required by claims 8, 15, and 22.

In addition to the above stated basis for the 35 U.S.C. § 103 rejections as set forth in paragraph 10 of the final office action, it is stated that “Cannon, Amburgey and Albright do not disclose at least one of said plurality of arms having a length sufficient to extend more than a quarter of the way down a bowling ball.” This assertion appears to be referring to dependent claims 3 and 10, amended herein to overcome rejections based on 35 U.S.C. § 112, second paragraph as stated above in Section III. Further, it is stated that “the limitations of this claim, absent any criticality, are only considered to be the “optimum” length of the plurality of arm of the angulator disclosed by Cannon [the ‘474 patent], as stated above, that a person having ordinary skill in the art would have been able to determine using routine experimentation based, among other things, on the desired accuracy, manufacturing costs, etc.” It is respectfully submitted that a person of ordinary skill in the art would not have been able to determine the arm length limitations of claims 3 and 10 based on the ‘474 patent, as the ‘474 patent does not involve a device for laying out a bowling ball. Moreover, claim 3 depends from and includes all of the limitations of claim 1, and claim 10 depends from and includes all of the limitations of claim 8. Accordingly, for at least the reasons set forth above, combining the ‘474, ‘041, and ‘586 patents does not teach or suggest all the claim limitations of claims 3 and 10 of the subject application.

For at least these reasons, it is believed that claims 8, 15, and 22 are patentable over the ‘474 patent, the ‘041 patent, and the ‘586 patent, alone or in combination, under 35 U.S.C. § 103(a) and are therefore allowable, and such indication is respectfully requested. Claims 9-14 depend from and include all of the limitations of claim 8. Claims 16-19 and 21 depend from and include all of the limitations of claim 15. Claims 23-26 and 28 depend from and include all of the limitations of claim 22. Accordingly, combining the ‘474, ‘041, and ‘586 patents does not teach or suggest all the claim limitations of claims 9-14, 16-19, 21, 23-26, and 28 of the subject application for at least the same reasons as claims 8, 15, and 22.

CONCLUSION

For at least the reasons discussed herein, claims 1-19, 21-26, 28, and 44 are believed to be in form for allowance, and such indication is earnestly requested. If there are any questions regarding the above, please contact the undersigned.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

This Amendment is being filed on April 14, 2003, which is before the three month shortened statutory period. If any petitions or fees are required, please consider this a petition therefore and charge Deposit Account No. 04-1415 the required additional amount. If the Examiner finds any issue that may be resolved in a telephone conference, please do not hesitate to contact the undersigned.

Signed at Denver, Colorado, this 14th day of April, 2003.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

1. (Twice Amended) A device for laying out a bowling ball, said device comprising:

a semi-spherical base portion, having a center adapted to substantially rest on a curved surface of the bowling ball [, for contacting a curved surface of a bowling ball], the perimeter of said base portion including degree indicators; and

at least four curved arms adapted to substantially rest on the curved surface of the bowling ball [for extending along the curved surface of a bowling ball], said arms including length measurement indicators, said arms connected with and extending from said base portion;

wherein at least two of said arms are adapted to rotate about the center of said semi-spherical base portion; and

whereby said center contacts the curved surface of the bowling ball and said at least four arms extend along the curved surface of the bowling ball when laying out the bowling ball.

Claim 3 has been amended as follows:

3. (Twice Amended) The device in claim 1, wherein:

at [lease] least one of said plurality of arms defines an arc of at least 90 degrees [having a length sufficient to extend more than a quarter of the way down the circumference of the bowling ball].

Claim 8 has been amended as follows:

8. (Twice Amended) A device for laying out a bowling ball, said device comprising:

a semi-spherical base portion adapted to substantially rest on a curved surface of the bowling ball [for contacting a curved surface of the bowling ball], said base portion defined by a solid perimeter portion including degree indicators, a substantially open middle portion, and a center portion, including a center aperture, joined with said perimeter portion; and

at least four curved arms adapted to substantially rest on the curved surface of the bowling ball [for extending along the curved surface of the bowling ball], said arms including length measurement indicators, said arms connected with and extending from said center portion of said semi-spherical base portion;

wherein at least two of said angle indicator arms are adapted to rotate about said center aperture of said center portion; and

whereby said semi-spherical base portion contacts a curved surface of the bowling ball and said at least four curved arms extend along the curved surface of the bowling ball when laying out the bowling ball.

Claim 10 has been amended as follows:

10. (Twice Amended) The device in claim 8, wherein:

at least one of said plurality of arms defines an arc of at least 90 degrees [having a length sufficient to extend more than a quarter of the way down the circumference of the bowling ball].

Claim 13 has been amended as follows:

13. (Once Amended) The device in claim 8, wherein:

an edge of each of said at least four [indicator] arms is aligned with the center of said center aperture in said center portion.

Claim 15 has been amended as follows:

15. (Twice Amended) A device for laying out a bowling ball, said device comprising:

a semi-spherical base portion adapted to substantially rest on a curved surface of the bowling ball [for contacting a curved surface of a bowling ball], the perimeter of said base portion including degree indicators and the center of said base portion including an aperture; and

at least three curved arms adapted to substantially rest on the curved surface of the bowling ball [for extending along the curved surface of a bowling ball], said arms including length measurement indicators, said arms connected with and extending from said semi-spherical base portion;

wherein at least one of said arms is adapted to rotate about the center of said semi-spherical base portion; and

whereby said semi-spherical base portion contacts a curved surface of a bowling ball and said at least three arms extend along the curved surface of the bowling ball when laying out the bowling ball.

Claim 19 has been amended as follows:

19. (Once Amended) The device in claim 15, wherein:

an edge of each of said at least three [indicator] arms is aligned with the center of said aperture in said base portion.

Claim 22 has been amended as follows:

22. (Twice Amended) A device for laying out a bowling ball having a spherical shape and a curved outer surface, said device comprising:

a semi-spherical base portion adapted to substantially rest on a curved surface of the bowling ball [adapted for contacting the curved surface of the bowling ball], said base portion defined by a center portion including degree indicators and including a center aperture; and

at least four curved arms adapted to substantially rest on the curved surface of the bowling ball [for extending along the curved surface of a bowling ball, said arms] including length measurement indicators, said arms connected with and extending from said center portion of said semi-spherical base portion;

wherein at least two of said arms are adapted to rotate about said center aperture of said center portion; and

whereby said semi-spherical base portion contacts the curved outer surface of the bowling ball and said at least four curved arms extend along the curved outer surface of the bowling ball when laying out the bowling ball.

Claim 26 has been amended as follows:

26. (Once Amended) The device in claim 22, wherein:

an edge of each of said at least four [indicator] arms is aligned with the center of said center aperture in said center portion.

Claim 44 has been amended as follows:

44. (Twice Amended) A device for laying out a bowling ball, said device comprising:

a semi-spherical base portion, having a center adapted to substantially rest on a curved surface of the bowling ball [, for contacting the curved outer surface of a bowling ball];
and

at least two curved arms adapted to substantially rest on the curved surface of the bowling ball [for extending along the curved surface of the bowling ball, said at least two arms]
connected with and extending from the base portion;

wherein a third arm is curved to extend along the curved surface of the bowling ball, and is adapted to rotate about the center of said base portion; and

whereby said center contacts a curved surface of the bowling ball and said at least two curved arms extend along the curved surface of the bowling ball when laying out the bowling ball.

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